CLAIMS

1. A dishwasher comprising at least one washing container (1) and a heat damping layer (5) which at least partially surrounds the washing container (1), characterised in that the heat damping layer (5) has a variable thermal conductivity which can be adjusted to at least two different thermal conductivity values.

2. The dishwasher according to claim 1, wherein the variable heat damping layer (5) comprises a closed capsule containing hydrogen in which at least one metal hydride grid is arranged, which can form a chemical compound with the hydrogen and thus bind the hydrogen.

3. The dishwasher according to claim 2, wherein the capsule of the variable heat damping layer (5) has a preferably pressed glass fibre core which is surrounded by a gastight jacket preferably made of stainless steel sheet.

4. The dishwasher according to any one of claims 2 or 3, wherein the capsule of the variable heat damping layer (5) can be heated to a temperature of about 300°C by preferably electrical heating means.

5. The dishwasher according to any one of claims 2 to 4, wherein heating of the capsule of the variable heat damping layer (5) has the effect that the hydrogen previously bound in the metal hydride grid is released, the pressure in the capsule of the variable heat damping layer (5) increases and the thermal conductivity of the capsule or the entire heat damping layer (5) is increased.

6. The dishwasher according to any one of claims 2 to 5, wherein cooling of the capsule of the variable heat damping layer (5) has the effect that the free hydrogen is resorbed with the metal hydride grid in a chemical compound, the pressure in the capsule of the variable heat damping layer (5) drops and the thermal conductivity of the capsule or the entire heat damping layer (5) is decreased.

7. The dishwasher according to any one of claims 2 to 6, wherein the capsule of the variable heat damping layer (5) has an internal pressure of about 0.01 mbar at room temperature and an internal pressure of about 50 mbar at a temperature of about 300°C.

8. The dishwasher according to any one of the preceding claims, wherein the thermal conductivity of the variable heat damping layer (5) is preferably continuously adjustable to an arbitrary thermal conductivity value between two thermal conductivity limits.

9. The dishwasher according to any one of the preceding claims, wherein the power of the current applied to the electrical heating means can be continuously regulated and thus the thermal conductivity of the variable heat damping layer (5) can be adjusted to any thermal conductivity value approximately in a range between 0.3 W/m^2K and 10 W/m^2K.

10. The dishwasher according to any one of the preceding claims, wherein the variable heat damping layer (5) is in heat-conducting contact with the wall (3) of the washing container (1) and with the outer wall of the dishwasher.

11. The dishwasher according to any one of the preceding claims, wherein the variable heat damping layer (5) is disposed in a side wall and/or in the door of the dishwasher.

12. The dishwasher according to any one of the preceding claims, wherein the variable heat damping layer (5) is disposed in the top and/or in the bottom of the dishwasher (1).

13. The dishwasher according to any one of the preceding claims, wherein the wall of the washing container (1) bounding the interior of the washing container (1) is constructed at least partly as a condensing surface made of flexible material, preferably in the form of plastic or metal film, especially of aluminium.

14. A method for cleaning and drying items for washing in dishwashers comprising at least one washing container (1) which is at least partly surrounded by a variable heat damping layer (5) whose thermal conductivity can be adjusted to at least two different thermal conductivity values, where the dishwasher is capable of executing one or more washing programs comprising the following steps, that
    - in a first section of the washing program thermal energy is built up in the washing container (1) by heat generating means and at the same time the heat damping layer (5) is adjusted to a low thermal conductivity so that the thermal energy built up in the washing container (1) is substantially preserved in the washing container, and
    - in a second section of the washing program a drying process is carried out wherein the heat damping layer (5) is adjusted to a high thermal conductivity so that at least some of the thermal energy present in the washing container (1) is delivered to the surroundings through the heat damping layer (5).

15. The method according to claim 14, wherein before or during a washing process, a clear rinsing process or during a first section of the drying process the variable heat damping layer (5) is adjusted to a low thermal conductivity and thermal energy is built up in the washing container (1) by heat generating means, and during the drying process or during the second section of the drying process the variable heat damping layer (5) is adjusted to a high thermal conductivity.

16. The method according to one of claims 14 or 15, wherein the thermal conductivity of the variable heat damping layer (5) is regulated by the program control of the dishwasher.

17. The method according to any one of claims 14 to 16, wherein the thermal conductivity of the variable heat damping layer (5) is regulated preferably by electric heating means used to heat the variable heat damping layer (5).

18. The method according to any one of claims 14 to 17, wherein the water deposited during the drying process in the washing container (1) is passed from the washing

container (1) for example into a sump of the dishwasher and/or is conveyed from the dishwasher via the discharge pump.